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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 893,023	06 27 2001	Frank O'Mahony	884.405US1	3406

7590 01 03 2003

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EXAMINER

SEFER, AHMED N

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 01 03 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,023

Applicant(s)

O'MAHONY ET AL.

Examiner

A. Sefer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 08 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 13-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 13-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Embodiment 3 (claims 13-18) in Paper No. 5 is acknowledged and claims 1-12 and 19-25 have been cancelled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura US Patent No. 5,521,541 in view of Chi US Patent No. 5,387,885 and Sano et al. (JP 2-158165).

Okamura discloses figs. 2-6 a microelectronic die comprising a clock signal source 102 to provide a clock signal; and a clock signal distribution network to distribute said clock signal to multiple clocked elements 106 within said microelectronic die, said clock signal distribution network including at least on-die interconnect section, but discloses neither the use of salphasic clocking techniques to distribute said clock signal nor an interconnect comprising first and second differential signal lines.

Chi discloses (see abstract) salphasic clocking techniques to distribute clock signals.

Sano et al disclose in figs. 4 and 5 an interconnect comprising first and second

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differential signal lines 221, 222 to carry a differential version of a clock signal, said first and second differential signal lines being substantially parallel to one another.

Therefore, it would have being obvious to one skilled in the art at the time the invention was made to use a salphasic clocking techniques, since that would minimize phase shifts. It would have been obvious to employ an interconnect comprising first and second differential signal lines, since that would suppress a crosstalk between channel.

Regarding claim 14, Sano et al disclose at least a trace 210 on a metal layer being capacitively coupled to and non-parallel or substantially orthogonal (as in claim 15) with said first and second differential signal lines.

Regarding claim 16, Chi discloses a sinusoidal clock signal.

4. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura in view of Chi and Sano et al. as applied to claim 13 above, and further in view of Restle et al. (IEEE Symposium on VLSI Circuits Digest of Techincal Papers, 1998).

The combined references above do not specifically disclose grid-based or an H-tree within a clock distribution network.

Restle et al disclose (see page 2) H-tree and grid-based within a clock distribution network.

Therefore, it would have being obvious to one skilled in the art at the time the invention was made to use grid-based (as in claim 17) or H-tree (as in claim 18) clock distribution network, since that would result in zero or very nominal skew.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Block et al. US Patent No. 6,397,375 disclose an interconnect with grid-based clock distribution.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (703) 308-6601.

ANS
December 23, 2002

[Handwritten signature]
A. SEFER
DEC 23 2002